

WATER CONVERSION TABLE

GPM = Gallons per minute**CFS = Cubic feet per second****AF = Acre-feet**

1 Cubic foot of water equals	7.48	Gallons
.....	1,728	Cubic Inches
1 AF of water equals		1 foot of water on 1 acre
.....	325,851	Gallons
.....	43,560	Cubic feet
1 CFS equals	448.8	GPM
.....	1.98	AF per day
.....	40	Miner's inches
1 GPM equals	1,440	Gallons per 24 hour day
.....	1.61	AF per year
1 Surface Acre equals	Size of area in square feet ÷ 43,560	

QUICK CONVERSIONS

MI X 11.22 = GPM**CFS X 40 = MI****MI ÷ 40 = CFS****CFS X 448.8 = GPM****MI X .0495 = AF/DAY****CFS X 1.98 = AF/DAY****GPM ÷ 11.22 = MI****AF/DAY ÷ 1.98 = CFS****GPM ÷ 448.8 = CFS****AF/DAY X 226.67 = GPM****GPM ÷ 226.67 = AF/DAY****AF/DAY ÷ .0495 = CFS**

GENERAL WATER REQUIREMENTS

DOMESTIC USE

1 home - up to 5 people 1 AF/YR

Shop use 1 AF/YR

1 acre lawn & garden 2.50 AF/season

1 acre shelter belt 2.50 AF/season

STOCKWATER USE

An animal unit (AU) is a measurement of livestock numbers. A cow and calf pair is one animal unit. Weaned animals are counted as one unit each.

$$\text{Number of AUs} \times .017 = \text{AF/YEAR}$$

$$\text{Number of AUs} \times .017 \div 365 \times \text{Days} = \text{AF/Number of days}$$

1 Buffalo	1.5 AU	1 Elk	1 AU	300 Chickens	1 AU
1 Horse	1.5 AU	5 Deer	1 AU	50 Geese	1 AU
1 Dairy Cow	1.5 AU	3 Llamas	1 AU	50 Ducks	1 AU
1 Beef Cow	1 AU	3 Pigs	1 AU	100 Turkeys	1 AU
2 Emu or 2 Ostrich	1 AU	5 Sheep	1 AU	100 Rabbits	1 AU

OTHER USES

Crop Spraying Gallons/Acre/YR X acres ÷ 325851 = AF/YR

Planning Guide for Water Use

<u>TYPE OF USE</u>	<u>GALLONS/DAY</u>	<u>TYPE OF USE</u>	<u>GALLONS/DAY</u>
Airports: (per passenger)	3-5	Livestock continued:	
Apartments: multiple-family (per resident)	60	6 Goat	15
Bathhouses: (per bather)	10	3 Hogs	15
Camps:		Horse	22.5
Construction, semipermanent (per worker)	50	3 Llamas	15
Day with no meals served (per camper)	15	5 Sheep	15
Luxury (per camper)	100-150	Motels:	
Resorts, day and night with limited plumbing (per camper)	50	With bath, toilet, & kitchen (per bed space)	50
Tourist with central bath and toilet facilities (per person)	35	With bed and toilet (per bed space)	40
Cottages: with seasonal occupancy (per resident)	50	Parks:	
Courts: tourist with individual bath units (per person)	50	Overnight with flush toilets (per camper)	25
Clubs:		Trailers with individual bath units, no sewer connection (per trailer)	25
Country (per resident member)	100	Trailers with individual baths connected to sewer (per person)	50
Country (per nonresident member present)	25	Picnic facilities:	
Dwellings:		With bathhouses, showers, and flush toilets (per picnicker)	20
Boardinghouses (per boarder)	50	With toilet facilities only (per picnicker)	10
Additional kitchen requirements for nonresident boarders	10	Restaurants:	
Luxury (per person)	100-150	With toilet facilities (per patron)	7-10
Multiple-family apartments (per resident)	40	Without toilet facilities (per patron)	3
Rooming houses (per resident)	60	With bars and cocktail lounge (additional quantity per patron)	2
Single family (per resident)	75	Schools:	
Estates (per resident)	100-150	Boarding (per pupil)	75-100
Factories:		Day with cafeteria, gymnasium & showers (per pupil)	25
(per person per shift)	15-35	Day with cafeteria, but no gymnasium or showers (per pupil)	20
Highway Rest Areas: (per person)	5	Day without cafeteria, gymnasium or showers (per pupil)	15
Hotels:		Service Stations: (per vehicle)	10
Private baths (two persons per room)	60	Stores: (per toilet room)	400
Without private baths (two persons per room)	50	Swimming Pools: (per swimmer)	10
Institutions:		Theaters:	
Non-hospital (per person)	75-125	Drive-in (per car space)	5
Hospitals (per bed)	250-400	Movie (per auditorium seat)	5
Churches (per person @ 104 days/yr)	20	Workers:	
Laundries: self-service (gallons per washing per customer)	50	Construction (per person per shift)	50
Livestock:		School or Offices (per person per shift)	15
Cattle	15		
Dairy Cows (drinking and servicing)	22.5		
300 Chickens	15		
100 Turkeys	15		

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WEBSITE: <http://www.dnrc.state.mt.us/wrd/home.htm>

